

Work Order ID: 56924

March 15, 2010 8:46:37 AM

Page 1

Item ID: D205-634-041

Accept



Setup Start



Revision ID:

Stop



Item Name: Replacement Skidtube

Start Date: 15/03/2010 Start Qty: 1.00



Cust Item ID:

Required Date: 31/03/2010 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

*H*Date: *10-3-15* Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

Draw Nbr

Revision Nbr

D2580

Rev D

100

0.00



DOCUMENT CONTROL

DC

Memo

0.00

Document Control

Photocopy D205-634 blue file & type labels per PPP D205-634-041 CHG002

8/10/04/07

110

0.00



BENDING MACHINE - SKIDTUBES

CNC Bend 1

Memo

0.00

CNC Delta 100 Bender

1-Bend as per program D2580.C on CNC Bender and Folio FT009

2-Cut tubes as per Dwg. D2580

*1 472/317-**56924*

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 56924

March 15, 2010 8:46:37 AM



Page 2

Item ID: D205-634-041

Accept



Setup Start



Revision ID:

Item Name: Replacement Skidtube

Stop



Start Date: 15/03/2010 Start Qty: 1.00



Cust Item ID:

Required Date: 31/03/2010 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

120

0.00



Skidtubes

Memo

0.00

Skidtubes

1- Deburr ends

2- C'sink holes as per dwg without cutting fluid

3- Prepare tube for welding, remove alodine as required.

4- Scribe batch number insied aft end of tube.

3 BE 10/03/17

130

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

Sidosh7



Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 56924

March 15, 2010 8:46:38 AM



Page 3

Item ID: D205-634-041

Accept



Setup Start



Revision ID:

Item Name: Replacement Skidtube

Stop



Start Date: 15/03/2010 Start Qty: 1.00



Cust Item ID:

Required Date: 31/03/2010 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

140

0.00



Skidtubes

Memo

0.00

Skidtubes

1-Weld step D2576 as per Dwg. D2580 and QSI 004

A/R□□□ Aluminum Rod

mm3207

BE 10/03/18

2-Prep per QSI 005 and weld crossbolt spacers D2579 as per Dwg. D2580, QSI 004.

For D2579 spacers, weld one side, pass 3/8" drill, weld other side, pass 3/8" drill

A/R□□□ Aluminum Rod

mm3207

BE 10/03/18

3-Grind welds as per Dwg D2580 Grind flush ridge made from bending

4-Drill holes for wearplates using DT 8217 & DT8937 Open holes to 19/64", adjust stopper not to hit web. Debur

5-Counterbore crossbolt spacers to 7/16" ID x 1.0" deep as per Dwg D2580. Debur holes

6-Drill pilot holes for aft cap using DT 8215 Open holes to 0.208". Debur

7-Drill pilot holes for Tow ring using DT8091, open to .640" and Debur

BE 10/03/23

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 56924

March 15, 2010 8:46:38 AM



Page 4

Item ID: D205-634-041

Accept



Setup Start



Revision ID:

Item Name: Replacement Skidtube

Stop



Start Date: 15/03/2010 Start Qty: 1.00



Cust Item ID:

Required Date: 31/03/2010 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: Date: Tooling: Date:

Run Start



QC: Date: SPC (Y/N): Date:

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

150

QC10- Inspect visual per QSI004- ground welds

0.00

8/10/03/23



QC

Memo

0.00



Quality Control

160

QC5- Inspect part completeness to step on W/O

0.00

5/10/03/23



QC

Memo

0.00



Quality Control

170

Pressure Wash per QSI005 4.3

0.00



HandFinish

Memo

0.00

Hand Finishing

Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch and leave fwd cap out of solution.

pk 10-3-24 04

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 56924

March 15, 2010 8:46:38 AM



Page 5

Item ID: D205-634-041

Accept



Setup Start



Revision ID:

Item Name: Replacement Skidtube

Stop



Start Date: 15/03/2010 Start Qty: 1.00



Cust Item ID:

Required Date: 31/03/2010 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: Date: Tooling: Date: QC: Date: SPC (Y/N): Date:

Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
180 Powdercoat Powder Coating	White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum Memo START TIME: 2:45pm OVEN TEMPERATURE: 320°F FINISH TIME: 3:15pm	0.00 0.00							
190 QC Quality Control	QC3- Inspect Part Finish Memo	0.00 0.00							

21113170

=> 10/01/24

10/01/24

(X1)

Ø

BR 10-3-30

Ø

44

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 56924

March 15, 2010 8:46:38 AM



Page 6

Item ID: D205-634-041

Accept



Setup Start



Revision ID:

Item Name: Replacement Skidtube

Stop



Start Date: 15/03/2010 Start Qty: 1.00



Cust Item ID:

Required Date: 31/03/2010 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

200

0.00



HandFinish

Memo

0.00

Hand Finishing

1-Install inserts & wearplates & Gaskets as per Dwg. D2580. Use a drop of Sikaflex on insert holes before installing wearplates
A/R ☐ ☐ ☐ Sikaflex-291 M112429
Sikaflex expire date: 10/08

2-Coat D2594-3 O' rings with Petroleum Jelly and install on D2594-1 plugs as per Dwg D2580

3-Inspect for foreign object per QSI 024

4-Install 2855 Aft Cap as per Dwg D2580 and seal Fwd Step & Aft Cap with Sikaflex. Clean excess adhesive
A/R ☐ ☐ ☐ Sikaflex-291 M112429
Sikaflex expire date: 10/08

5-Wing Walk as per Dwg D2580 and QSI 005 4.4
Batch: M113462

BR 10-3-30 ①.

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 56924

March 15, 2010 8:46:38 AM



Page 7

Item ID: D205-634-041

Accept



Setup Start



Revision ID:

Item Name: Replacement Skidtube

Stop



Start Date: 15/03/2010 Start Qty: 1.00



Cust Item ID:

Required Date: 31/03/2010 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

210



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

0.00

Sub 31



Memo

Inspect Aft Cap, Fwd Step and Wing Walk of work to Current Step Inspect for Foreign objects per QSI 024

220



Packaging

Packaging

Packaging

0.00

0.00

Memo

Identify and pack for shipping as per PPPD205-634-041

Location:

PPP Rev: I

Rec'd 4/7

230



QC

Quality Control

QC21- Final Inspection - Work Order Release

0.00

0.00

Memo

10/04/07
MF
10-4-7

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

March 15, 2010 8:46:44 AM

Page 1

Work Order ID: 56924

Parent Item: D205-634-041

Parent Item Name: Replacement Skidtube

Start Date: 15/03/2010

Required Date: 31/03/2010

Comments: IPP Rev:N 02.08.28 FP was QC5 in Step 27; Added QC5 to Step 30 KJ
 IPP Rev P 10.02.19 per PAR09-043 EC verified by:DD
 IPP Rev. O 06.02.28 Added paperwork EC
 IPP Rev:P 07-07-09 SS Wearplates & Gaskets JLM

Start Qty: 1.00

Required Qty: 1.00

D2580-1



205 Skidtube bent detail

Manufactured No 110 Each 2.0000 1.0000



Warehouse Loc Qty Loc Code
Location

Main Warehouse

LG 2

54541 2

Manufactured No 140 Each 128.0000 1.0000



Warehouse Loc Qty Loc Code
Location

Main Warehouse

ST 128

46661 81

52215 47

D2576-3



Step (maching detail)

25667 1 14/03/17

BE 10/03/18

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

March 15, 2010 8:46:44 AM

Page 2

Work Order ID: 56924



Parent Item: D205-634-041



Parent Item Name: Replacement Skidtube

Start Date: 15/03/2010

Required Date: 31/03/2010

Comments: IPP Rev: N 02.08.28 FP was QC5 in Step 27; Added QC5 to Step 30 KJ
IPP Rev P 10.02.19 per PAR09-043 EC verified by: DD
IPP Rev. O 06.02.28 Added paperwork EC
IPP Rev: P 07-07-09 SS Wearplates & Gaskets JLM

Start Qty: 1.00

Required Qty: 1.00

D2579. Manufactured No 140 Each 227.0000 20.0000



Crossbolt Spacer

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
Main Warehouse		
LG	105	
51525	4	
53780	3	
54543	18	
56715	80	
Main Warehouse		
ST	122	
43988	4	
46434	4	
46956	2	
47797	9	
48272	2	
51314	71	
51315	30	

2568/8

20R 1

BE 10/03/18

March 15, 2010 8:46:44 AM

Shop Packet Print

Page 2

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

March 15, 2010 8:46:44 AM

Page 3

Work Order ID: 56924



Parent Item: D205-634-041



Parent Item Name: Replacement Skidtube

Start Date: 15/03/2010

Required Date: 31/03/2010

Comments: IPP Rev: N 02.08.28 FP was QC5 in Step 27; Added QC5 to Step 30 KJ
 IPP Rev P 10.02.19 per PAR09-043 EC verified by: DD
 IPP Rev. O 06.02.28 Added paperwork EC
 IPP Rev: P 07-07-09 SS Wearplates & Gaskets JLM

Start Qty: 1.00

Required Qty: 1.00

D2855 Manufactured No 200 Each 139.0000 1.0000



Cap

Warehouse	Loc Qty	Loc Code
Location		
Main Warehouse		
FP6	1	
56613	1	
Main Warehouse		
ST026	138	
50513	1	
50770	1	
51539	37	
53791	99	

1 BR 10-3-30.

AN3-5A Purchased No 200 Each 1,397.000 2.0000



Bolt

Warehouse	Loc Qty	Loc Code
Location		
Main Warehouse		
ST350	1397	
100188	188	
105057	1209	

2 BR 10-3-30.

March 15, 2010 8:46:44 AM

Shop Packet Print

Page 3

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

March 15, 2010 8:46:44 AM

Page 4

Work Order ID: 56924

Parent Item: D205-634-041

Parent Item Name: Replacement Skidtube

Comments: IPP Rev: N 02.08.28 FP was QC5 in Step 27; Added QC5 to Step 30 KJ
 IPP Rev P 10.02.19 per PAR09-043 EC verified by: DD
 IPP Rev. O 06.02.28 Added paperwork EC
 IPP Rev: P 07-07-09 SS Wearplates & Gaskets JLM

Start Date: 15/03/2010

Required Date: 31/03/2010

Start Qty: 1.00

Required Qty: 1.00

AN960JD10L

Purchased

No

200

Each

3,029.000

2.0000



Washer

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

ST348

3029

101291

16

105793

49

110985 ✓

2964

ALS7-1032-130

Purchased

No

200

Each

986.0000

50.0000



Insert

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

ST282

986

108606

52

111529

130

111779

34

112772 ✓

11

113238 ✓

759

2 R 10-3-30.

50 R 10-3-30.

March 15, 2010 8:46:44 AM

Shop Packet Print

Page 4

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

March 15, 2010 8:46:44 AM

Page 5

Work Order ID: 56924



Parent Item: D205-634-041



Parent Item Name: Replacement Skidtube

Start Date: 15/03/2010

Required Date: 31/03/2010

Comments: IPP Rev:N 02.08.28 FP was QC5 in Step 27; Added QC5 to Step 30 KJ
 IPP Rev P 10.02.19 per PAR09-043 EC verified by:DD
 IPP Rev. O 06.02.28 Added paperwork EC
 IPP Rev:P 07-07-09 SS Wearplates & Gaskets JLM

Start Qty: 1.00

Required Qty: 1.00

AN3C4A Purchased No 200 Each 1,293.000 50.0000



BOLT

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
Main Warehouse		
ST350	1293	
112314	13	
112720	12	
112724 ✓	3	
112829	1	
112991	2	
113121	64	
113226	344	
113644	12	
113749	11	
114103 ✓	331	
114108	500	

50 PR 10-3-30.

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

March 15, 2010 8:46:44 AM

Page 6

Work Order ID: 56924



Parent Item: D205-634-041



Parent Item Name: Replacement Skidtube

Start Date: 15/03/2010

Required Date: 31/03/2010

Comments: IPP Rev: N 02.08.28 FP was QC5 in Step 27; Added QC5 to Step 30 KJ
 IPP Rev P 10.02.19 per PAR09-043 EC verified by: DD
 IPP Rev. O 06.02.28 Added paperwork EC
 IPP Rev: P 07-07-09 SS Wearplates & Gaskets JLM

Start Qty: 1.00

Required Qty: 1.00

AN960C10L

Purchased

No

200

Each

388.0000

50.0000



washer

Warehouse

Loc Qty

Loc Code

Location

NAS1149C0332R

OFFSHORE

FG

113691

100

103585

100

Main Warehouse

ST

288

112116

128

112612

160

50 BR 10-3-30

D3566-13

Manufactured

No

200

Each

68.0000

1.0000



Gasket

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

FP

66

53461

66

Main Warehouse

ST

2

45717

1

50265

1

1 BR 10-3-30

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

March 15, 2010 8:46:44 AM

Page 7

Work Order ID: 56924



Parent Item: D205-634-041



Parent Item Name: Replacement Skidtube

Start Date: 15/03/2010

Required Date: 31/03/2010

Comments: IPP Rev: N 02.08.28 LFP was QC5 in Step 27; Added QC5 to Step 30 LKJ
IPP Rev P 10.02.19 per PAR09-043 EC verified by: DD
IPP Rev. O 06.02.28 Added paperwork EC
IPP Rev: P 07-07-09 SS Wearplates & Gaskets JLM

Start Qty: 1.00

Required Qty: 1.00

D3566-5 Manufactured No 200 Each 18.0000 1.0000



Gasket

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
Main Warehouse		
FP19	15	
55026	3	
55335 ✓	12	
Main Warehouse		
ST	3	
36113	1	
46186	1	
51260	1	

1 BR 10-3-30.

March 15, 2010 8:46:44 AM

Shop Packet Print

Page 7

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

March 15, 2010 8:46:44 AM

Page 8

Work Order ID: 56924



Parent Item: D205-634-041



Parent Item Name: Replacement Skidtube

Start Date: 15/03/2010

Required Date: 31/03/2010

Comments: IPP Rev: N 02.08.28 FP was QC5 in Step 27; Added QC5 to Step 30 BKJ
 IPP Rev P 10.02.19 per PAR09-043 EC verified by: DD
 IPP Rev. O 06.02.28 Added paperwork EC
 IPP Rev: P 07-07-09 SS Wearplates & Gaskets JLM

Start Qty: 1.00

Required Qty: 1.00

D3566-1 Manufactured No 200 Each 25.0000 2.0000



Gasket

Warehouse Loc Qty Loc Code

Location

Main Warehouse

FP 56825 20
 52512 3
 54480 1
 55011 1
 55320 1
 56532 14

Main Warehouse

ST 5
 46349 1
 51218 1
 51259 3

2. BR 10-3-30.

D3564-11 Manufactured No 200 Each 5.0000 1.0000



Wearshoe

Warehouse Loc Qty Loc Code

Location

Main Warehouse

FP19 56834 3
 55332 3

Main Warehouse

ST 2
 45823 1
 50112 1

1 BR 10-3-30.

March 15, 2010 8:46:44 AM

Shop Packet Print

Page 8

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

March 15, 2010 8:46:44 AM

Page 9

Work Order ID: 56924



Parent Item: D205-634-041



Parent Item Name: Replacement Skidtube

Start Date: 15/03/2010

Required Date: 31/03/2010

Comments: IPP Rev: N 02.08.28 FP was QC5 in Step 27; Added QC5 to Step 30 KJ
 IPP Rev P 10.02.19 per PAR09-043 EC verified by: DD
 IPP Rev. O 06.02.28 Added paperwork EC
 IPP Rev: P 07-07-09 SS Wearplates & Gaskets JLM

Start Qty: 1.00

Required Qty: 1.00

D3564-13 Manufactured No 200 Each 29.0000 1.0000



Wearshoe

Warehouse Loc Qty Loc Code

Location

Main Warehouse

FP17 17

56285 ✓ 17

Main Warehouse

ST 12

45409 2

46495 10

1 DR 10-3-30

D3564-9 Manufactured No 200 Each 14.0000 1.0000



Wearshoe

Warehouse Loc Qty Loc Code

Location

Main Warehouse

FP19 12

55334 ✓ 12

Main Warehouse

ST 2

44659 1

45825 1

1 DR 10-3-30.

March 15, 2010 8:46:44 AM

Shop Packet Print

Page 9

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

March 15, 2010 8:46:44 AM

Page 10

Work Order ID: 56924



Parent Item: D205-634-041



Parent Item Name: Replacement Skidtube

Start Date: 15/03/2010

Required Date: 31/03/2010

Comments: IPP Rev: N 02.08.28 FP was QC5 in Step 27; Added QC5 to Step 30 KJ
 IPP Rev P 10.02.19 per PAR09-043 EC verified by: DD
 IPP Rev. O 06.02.28 Added paperwork EC
 IPP Rev: P 07-07-09 SS Wearplates & Gaskets JLM

Start Qty: 1.00

Required Qty: 1.00

D3564-5

Manufactured No

200 Each

28.0000 1.0000



Wearshoe

Warehouse

Loc Qty

Loc Code

Location

OFFSHORE

FG

2

34806

2

Main Warehouse

FP19

25

51925

1

55024

12

55333

12

Main Warehouse

ST

1

45824

1

D2594-3

Manufactured No

200 Each

420.0000 16.0000



O-Ring, 205 Skidtube

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

FP

407

51613

27

55546

380

Main Warehouse

ST

13

52562

13

March 15, 2010 8:46:44 AM

Shop Packet Print

Page 10

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

March 15, 2010 8:46:44 AM

Page 11

Work Order ID: 56924



Parent Item: D205-634-041



Parent Item Name: Replacement Skidtube

Start Date: 15/03/2010

Required Date: 31/03/2010

Comments: IPP Rev:N 02.08.28 FP was QC5 in Step 27; Added QC5 to Step 30 KJ
IPP Rev P 10.02.19 per PAR09-043 EC verified by:DD
IPP Rev. O 06.02.28 Added paperwork EC
IPP Rev:P 07-07-09 SS Wearplates & Gaskets JLM

Start Qty: 1.00

Required Qty: 1.00

D2594-I

Manufactured No

200

Each

513.0000

16.0000



Plug, 205 Skidtube

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

FP

385

54008

1

54643

15

55002 ✓

369

Main Warehouse

ST

128

42221

16

42807

92

43884

3

46435

2

51527

9

51757

6

16. PR 10-3-30.

March 15, 2010 8:46:44 AM

Shop Packet Print

Page 11

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART

DESIGN <i>[Signature]</i>	DRAWN BY <i>[Signature]</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D2580	REV. D SHEET 1 OF 3
DATE 07.02.27		TITLE 205 SKIDTUBE ASSEMBLY	SCALE NTS
A	96.09.16	NEW ISSUE	
B	96.12.02	AS MANUFACTURED	
C	98.08.26	REDRAWN, INCLUDED DEO 9094/9097	
D	07.02.27	CHANGE TO SS WEARPLATES AND GASKETS, INCLUDE DEO 9124/9183	

RELEASED
07-06-28 *[Signature]*

QTY -041	QTY -045	Part Number	Description
X		D2580-041	SKIDTUBE ASSEMBLY
	X	D2580-045	SKIDTUBE ASSEMBLY
1	1	D2500-1-190	EXTRUSION
1	1	D2576-3	STEP
20	24	D2579	CROSS BOLT SPACER
16	16	D2594-1	PLUG
16	16	D2594-3	O-RING
1	1	D2596	205 WEB
1	1	D2855	AFT CAP
1	1	D3564-5	WEARSHOE
1	1	D3564-9	WEARSHOE
1	1	D3564-11	WEARSHOE
1	1	D3564-13	WEARSHOE
2	2	D3566-1	GASKET
1	1	D3566-5	GASKET
1	1	D3566-13	GASKET
50	50	ALS7-1032-130 or AKS7-1032-130 or AKS4-1032-130 or AELS-1032-130	INSERT
50	50	AN3C4A	BOLT
2	2	AN3-5A	BOLT
50	50	AN960C10L	WASHER
2	2	AN960JD10L	WASHER

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 56924
BS10-3-15

GENERAL NOTES:

- 1) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 2) ALL DIMENSIONS ARE IN INCHES
- 3) INSERT D2596 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241 ADHESIVE PER DART QSI 015 BEFORE BENDING. ENSURE HOLES LINE-UP.
- 4) BEND AS A SMOOTH RADIUS STARTING WITH A MAXIMUM CENTERLINE RADIUS OF 60 AND ENDING WITH A MINIMUM RADIUS OF 30. A MAXIMUM REDUCTION OF 0.200 IN DIAMETER IS ALLOWABLE IN THE BENT PORTION OF THE TUBE.
- 5) USE DART DRILL TEMPLATE TD2577-205 TO LOCATE AND DRILL Ø0.297 HOLES FOR WEARSHOE INSERTS. INSTALL ALS7-1032-130 PER SECTION D-D (50 PLACES) AFTER FINISH. INSTALL AN3C4A BOLTS AND AN960C10L WASHERS WITH SIKAFLEX-241/-291.
- 6) WELDING TO BE DONE PER DART QSI 004.
- 7) FINISH:
SEE NOTES ON
PAGE 2 FOR D2580-041 AND
PAGE 3 FOR D2580-045
- 8) INSERT D2594-1 PLUG C/W D2594-3 O-RING IN HOLES MARKED 'P' (BOTH SIDES OF TUBE) AFTER FINISH (16 PLACES).

Copyright © 1996 by DART AEROSPACE LTD

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.

RELEASED
07-06-28

Diagram illustrating the grinding locations for the D2576-3 step. The diagram shows a cross-section of the step with the following labels:

- GRIND FLUSH (4 PLACES)
- GRIND FLUSH
- D2576-3 STEP
- LOCATION RIDGE ON UNDERSIDE OF D2576
- $\frac{1}{4}$

0.208

DRILL PRIOR TO D2855 CAP
INSTALLATION (2 PLACES)

SEAL WITH
SIKAFLEX-241/-291

AN3-5A BOLT (1)

AN960JD10L WASHER
(1)
(2 PLACES)

D2855 CAP

0.40

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 56924

D2579 SPACER

D2596 WEB (REF)

ALS7-1032-130 (REF)
(TYP 50 PLACES)

5

AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR #0.508 HOLES ONLY:

1. CHAMFER HOLE 0.050 X 45°
2. INSERT D2579 SPACER (20 PLACES)
3. WELD INTO PLACE AND GRIND FLUSH
4. C'BORE D2579 SPACER TO 0.437 X 1.00 DEEP

[illegible]

WELD AS PER DETAIL B

BLACK ANTI-SKID TO 0.5 ABOVE LOCATION RIDGE

BLACK ANTI-SKID TOP OF STEP TO 0.5 ABOVE BOTTOM EDGE

0.5

1.5

1.5

0

P P P P P P P

0

REFER TO DETAIL C

D3566-1

D3566-5

D3566-1

D3566-13

D3564-11

D3564-5

D3564-9

D3564-13

AN3C4A BOLT (1)

AN960C10L WASHER (1)

(50 PLACES)

DESIGN	1	DRAWN BY	
--------	---	----------	--

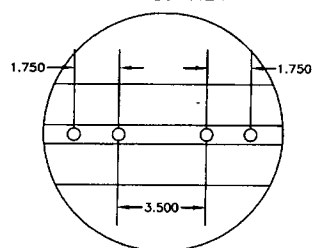
i) FINISH: ACID ETCH, ALODINE PER DART QSI 005 4.1 PRIOR TO INSERTING D2596 WEB POWDER COAT ASSEMBLY GLOSS WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3 BLACK ANTI-SKID PAINT AS INDICATED PER DART QSI 005 4.4

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL
AND IS SUPPLIED ON THE EXPRESS CONDITION
THAT IT IS NOT TO BE USED FOR ANY PURPOSE
OR COPIED OR COMMUNICATED TO ANY OTHER
PERSON WITHOUT WRITTEN PERMISSION FROM
DART AEROSPACE LTD.

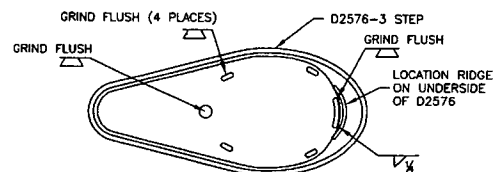
DART DART AEROSPACE LTD.
HAMPSHIRE, ONTARIO, CANADA

DRAWING NO.	REV. D
D2580	SHEET 2 OF 3
TITLE	SCALE
205 SKIDTUBE ASSEMBLY	1:24

DETAIL E
SCALE 5:24

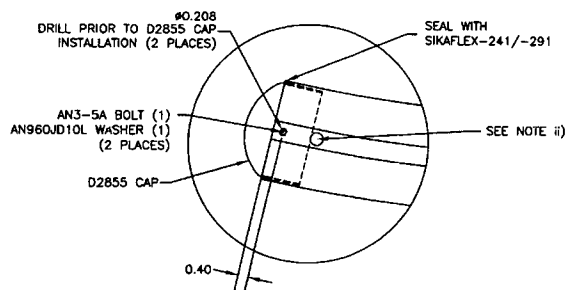


DETAIL F
SCALE 5:24

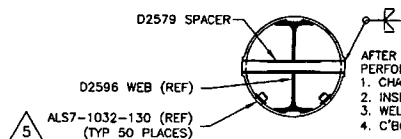


RELEASED
07.06.28

DETAIL G
SCALE 5:24

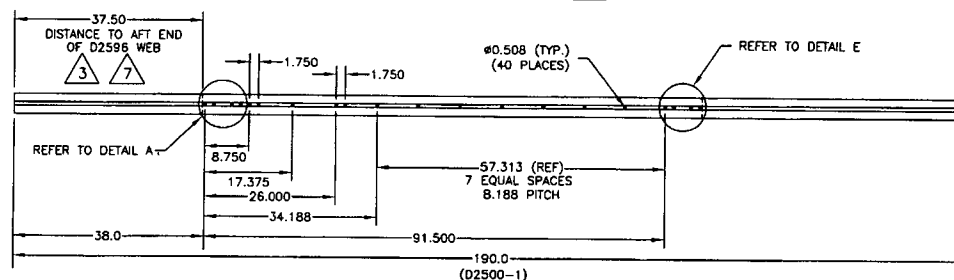


SECTION H-H
SCALE 5:24

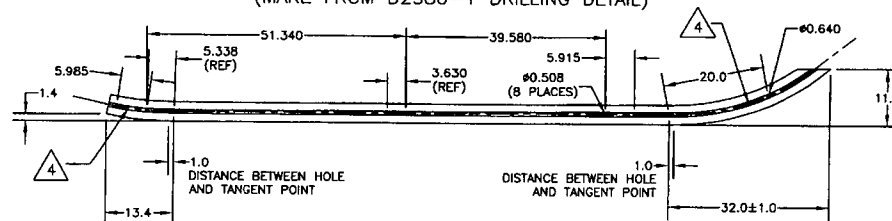


AFTER DRILLING AND BENDING ASSEMBLY PERFORM THE FOLLOWING FOR #0.508 HOLES ONLY:
1. CHAMFER HOLE 0.050 X 45°
2. INSERT D2579 SPACER (20 PLACES)
3. WELD INTO PLACE AND GRIND FLUSH
4. C'BORE D2579 SPACER TO #0.437 X 1.00 DEEP

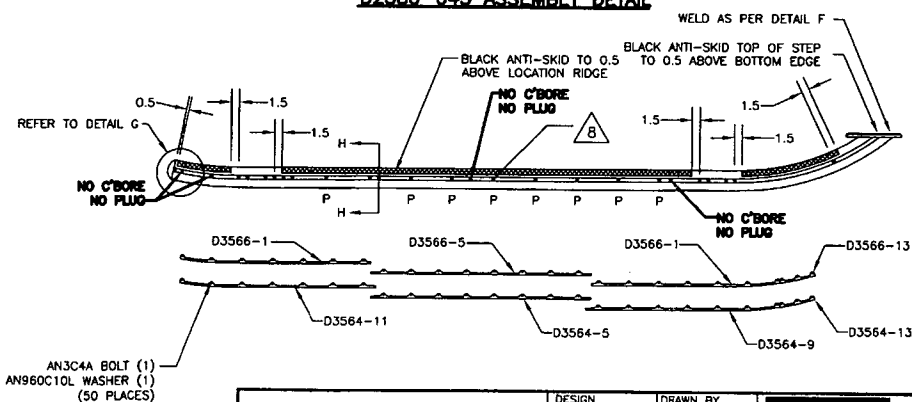
D2580-1 DRILLING DETAIL



D2580-5 BENDING AND CUTTING DETAIL
(MAKE FROM D2580-1 DRILLING DETAIL)



D2580-045 ASSEMBLY DETAIL



D2580-045 NOTES

- i) FINISH: ACID ETCH, ALODINE PER DART QSI 005 4.1 PRIOR TO INSERTING D2596 WEB POWDER COAT ENTIRE ASSEMBLY GREEN (REF. 4.3.5.8) PER DART QSI 005 4.3 BLACK ANTI-SKID PAINT AS INDICATED PER DART QSI 005 4.4
- ii) IT IS ACCEPTABLE TO GRIND A RELIEF IN THE D2855 AFT CAP TO PREVENT INTERFERENCE WITH THE SPACER AT THIS LOCATION

COPYRIGHT © 1996 BY DART AEROSPACE LTD.

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.

DESIGN RH	DRAWN BY RH	DART	DART AEROSPACE LTD. HAMMERSBURY, ONTARIO, CANADA
CHECKED H	APPROVED H	DRAWING NO. D2580	REV. 0 SHEET 3 OF 3
DATE 07.02.27	TITLE 205 SKIDTUBE ASSEMBLY	SCALE 1:24	

NO. 227

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name: Barday Elliott
Job number: 56925
Part number: D205-634-041
Description: 205 skid tube
Welding Process: Tig[☒] Mig[]
Base material: Aluminum
Current: AC[☒] DC[]

TEST REQUIREMENTS AND RESULTS

Visual: pass[☒] fail[]
Penetration: pass[☒] fail[]

UNACCEPTABLE

Cracks: pass[☒] fail[]
Undercut: pass[☒] fail[]
Pin holes: pass[☒] fail[]
Overlap (cold lap): pass[☒] fail[]
Porosity (surface): pass[☒] fail[]
Coloration: pass[☒] fail[]

Qualifier Paul Smith Date of Test Coupon 0.03.19

Welder Barday Elliott Date of Test Coupon 16-03-19

The above named individual is qualified in accordance with AWS D17.1.2001 to weld